The Worldwide Standard of Full Color Balance Lens

CBL

A few seconds calibration provides you with beautiful color-corrected Images

- Digital Back Mounted View Cameras
- Digital Back Mounted SLR Cameras
- Digital SLR Cameras (DSLR)
- Camcorders
- Compact Digital Cameras
- HD Broadcasting & Movie Cameras

CBL Europe GmbH

Laerchenweg 20A 61440 Oberursel Germany

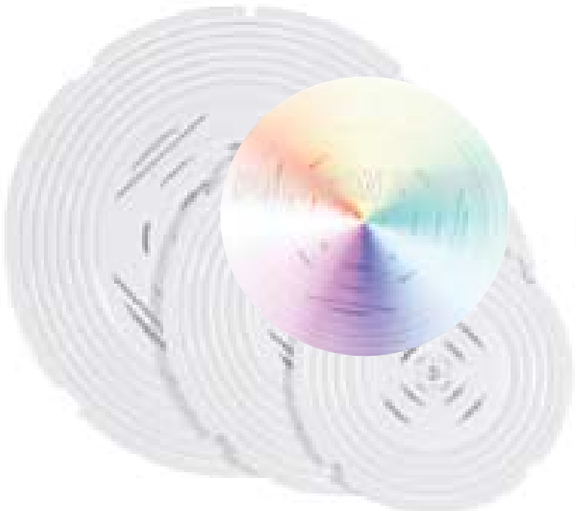
Tel : +49 6171 923313 Mobile: +49 162 4194047

Special Boards & Components for Prism Technology

Condenser Lens

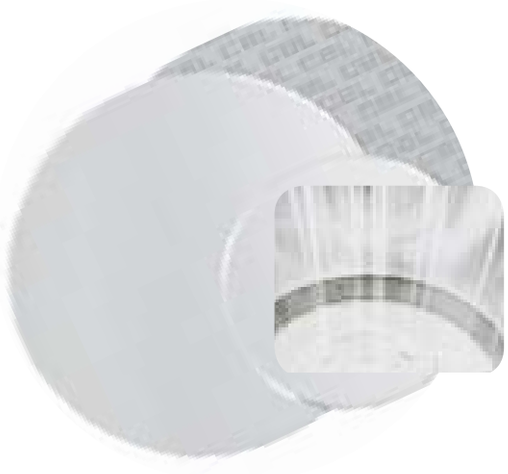
It gathers the light into the range of lens housing through mixed boards

Polygram Prism Mixed Boards



The grooves, lines and very fine surface of mixed boards act as prism and create the vast ranges of full color spectrum

Reflection Boards



These boards emit and reflect the vast spectrum created from mixed board into the CCD /CMOS of your digital shooting equipments

"CBL Lens is the Full Color Balance device which overcomes the limitation of previous white balance and it expresses very precise color images as exactly seen by our own eyes." – Professor Hwang Seon Goo –

Source: Photographic Art Magazine, April & June 2007

" I am impressed that such an easy to use product incorporates such an advanced set of features for achieving an accurate and pleasing reproduction of colors in their photographs."

– Professor Harris Fogel –

Associate Professor, Photography, The University of Art, Philadelphia

2 ◈ Enjoy your photos with CBL Full Color Balance Setting!

◈ Full Color Spectrum by Polygram Prism Technology

CBL Lens 220mm
(for HD Video Cameras)

Full Color Balance Setting especially for HD Movie, Broadcasting cameras, and bigger digital shooting equipments

Full Color Balance Setting for HD Movie, Broadcasting cameras, and bigger digital shooting equipments

CBL Lens 110mm
(for Serious & Professional Photographers)

Full Color Balance Setting for DSLR cameras, View cameras with Digital Back, and other digital shooting equipments

CBL Lens 85mm
(for Amateur Photographers)

Setting for DSLR cameras

CBL Lens 60mm

High end compact digital cameras

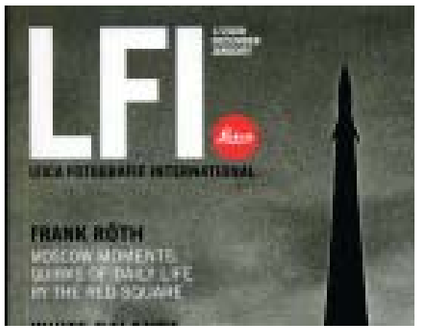
"Full Color Balance Setting" is now the name of game in modern photography

WHY MANUAL BALANCE?

Taking your time with the white balance can reduce the amount of post production necessary.

Depending on how "White" is interpreted, digital cameras like to keep their color temperatures somewhere between 5,000 and 5,600 Kelvin.

The problem here is that the internal camera temperature doesn't always correspond to reality.



Manual measurement with CBL: Here the impression is nice and balanced

Manual measurement with Expodisc: A decent result, though a little on the cool side

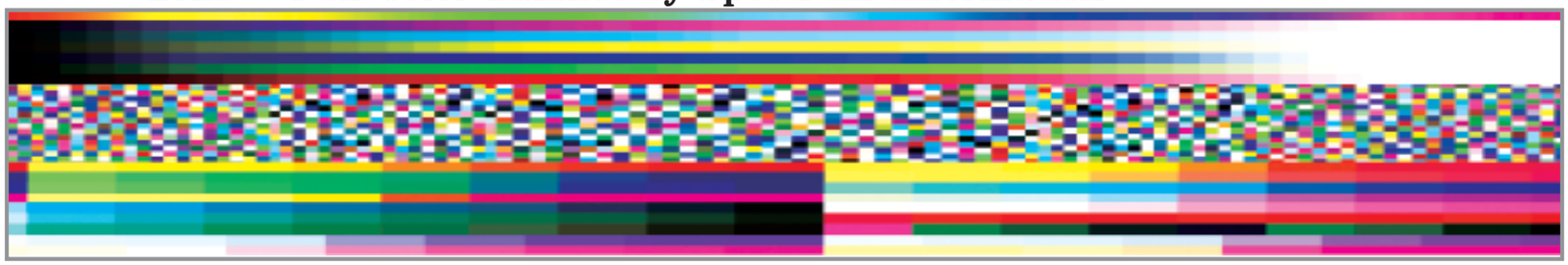
CBL Lens works particularly well with digital SLR cameras. The **CBL** Lens will then supply the excellent results you are looking for. Even cameras with well-reputed white balance modes will clearly profit from the CBL Lens. The Lens does not depend on the 18 percent grey balance and thus allows for full color white balance."

Source: LFI Magazine, January 2008. Writer: Mr. Ronald Schmidt

In near future, the current standard of "White Balance" terms will be changed into a new standard of "Full Color Balance" by **CBL** Lens.

– Professor Hwang Seon Goo –

CBL Lens – Full Color Balance by Spectrum Information



CBL Lens is the Full Color Balance device invented to express very precise original color images as exactly seen by our own eyes.
– Professor Hwang Seon Goo –
Source: Photographic Arts Magazine, April & June 2007

The CBL Lens doesn't depend on the 18 percent grey balance and thus allows for full color balance.
Source: LFI Magazine, January 2008. Writer: Mr. Ronald Schmidt

18% "White Balance" Scale Information (Zone System)

The existing white balance setting devices like grey cards or filters are based on 18% reflectance medium grey which had been used for checking the exposure & gradation level of black and white photography.
– Professor Hwang Seon Goo –
Source: Photographic Art Magazine, April & June 207

Most approaches are based on the selection of neutral grey point, similar to an 18% grey card. It has certain drawbacks and it is not uncommon to find a subtle colorcast to images even after using a grey card or other products to set the neutral point. – Professor Harris Fogel –
Department of Photography, The University of Art, Philadelphia

◈ Testimonials : CBL Full Color Balance Lens

◈ Professor Harris Fogel ◈

Associate Professor of Photography, The University of Art, Philadelphia
"As a professor of photography and digital imaging, I' m keenly aware of and interested in solutions that help to solve color management problems. and thus I was interested in your product, which took a new approach to the problem of setting an accurate white balance in digitally captured images."

"Most approaches are based on the selection of neutral grey point, similar to an 18% grey card. It has certain drawbacks."

"I find that CBL took an interesting and unique approach to the problem, which was to create a handheld test target that utilized a combination of neutral point and prism technology to achieve accurate readings. This is a fresh approach to the problem, and my test of your CBL Lens units resulted in a very accurate white balance, with no colorcast for the final image."

"When I first encountered your product, it didn' t seem all that complicated, a simple handheld plastic target with what seemed to be a plastic cover. But, I soon learned that each unit was hand-calibrated, and had an advanced and complicated inner coating system, and that the design' s plastic cover actually acted as prism, a design so unique that CBL was granted a patent on it."

◈ Testimonials : CBL Full Color Balance Lens

"While there are other very competent solutions to setting an accurate white point when working with digital cameras, the CBL Lens design seems to be in a class all its own. for the critical user who demands an absolutely accurate color capture and post-production, the CBL Lens deserves serious consideration."

"I am impressed that such an easy to use product incorporates such an advanced set of features. I believe that the CBL Lens is a solution that many serious photographers will discover to be a powerful tool for achieving an accurate and pleasing reproduction of colors in their photographs."

- Professor Harris Fogel -

◈ Andy Marcus, US Prestigious Wedding Photographer

"The CBL lens system has helped me save hours of time from my digital workflow. Just literally, a few seconds calibrating my camera and I have beautiful color-corrected Images that need no adjustments.

If you want to save hours of time, try the CBL Lens with your camera and see why I have a big smile on my face these days."

◈ Testimonials : CBL Full Color Balance Lens

Professor Yang Jae Moon
Shin Ku College, Department of Photography
Technical Adviser of Samsung Cameras.
Editing Committee of "Photographic Art" Magazine
Host of Lectures & Seminars of KBS, EBS, MBC TV Photography Program

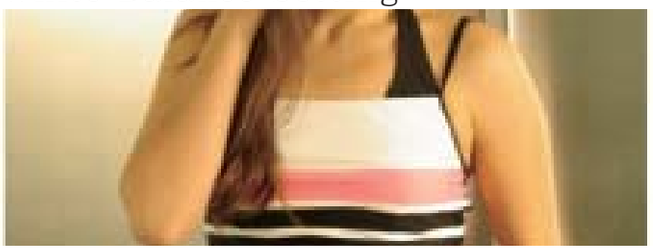
CBL Lens provides the vast range of continuous spectrum to your camera which can read and memorize the Full Color Spectrum information under your shooting environment by Full Color Balance Setting of CBL Lens.

CBL Lens let your camera get greater performance and result. After properly setting by **CBL** Lens, you can get much greater gradation, resolution, and sharpness of your photos with very natural and precise color images.

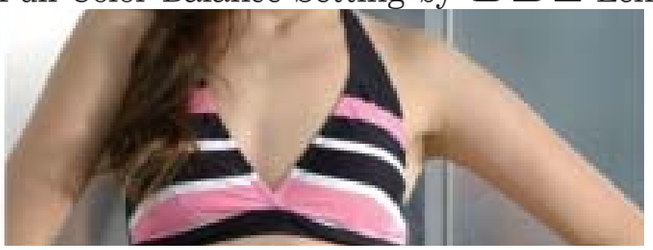
When you set manual white balance with a white card or grey card, you could see better color image than auto white balance. However there colorcast can be still seen if you compare the color image set by **CBL** Lens.

The reasons of those colorcast are from the fact that white papers or grey cards, or filters are all based on the 18% medium grey scale. But only **CBL** Lens is based on Full Color Spectrum information. **CBL** Lens is uniquely based on Full Color Spectrum Information among all kinds of other white balance devices in the world.

White Balance Setting



Full Color Balance Setting by **CBL** Lens



Photos provided by professor Yang from Samsung GX-10 Guide Book

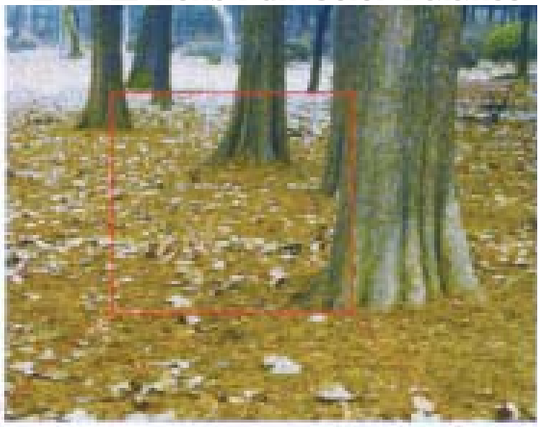
◈ Testimonials : CBL Full Color Balance Lens

And when you shoot the image with RAW file, if you set Full Color Balance by CBL Lens, you can reduce more time for post correction or you have nothing or very little to correct to get the best color images you expect.

White Balance Setting

CBL Full Color Balance Setting

CBL Lens Full Color Balance



◈ Testimonials : CBL Full Color Balance Lens

Professor Hwang Seon Goo
Seoul National College of Arts. Photography
Digital Image Columnist
Graduated from New York University, Media Art

"I was proud of myself on the white balance as I had studied and wrote many articles on the white balance so far. Color Balance Lens was totally new to me and I felt interested how it expressed colors and the standard which are the most difficult part of photography."

"I found after I have used **CBL** Lens for last several months that **CBL** Lens is a new system which improved the weak points of custom white balance and it becomes a new standard of expressing color images for professional or serious digital photographers."

CBL Lens beyond the limitation of White, Gray Cards and Filters

I have compared the custom white balance devices; Gray Card, Color Meter, and **CBL** Lens. The kelvin levels of Color Meter are all different depending on the distance, angle, direction of light to the subject and the image results set by kelvin meter are expressed all differently.

CBL Lens is the Full Color Balance setting device of totally new concept beyond the limitation of White, Grey Cards and Filters. Although many White and Grey balance devices have been introduced so far, **CBL** Lens is the first one which has an unique concept of Full Color Balance.

CBL Lens provides the precise standard of natural and original color without further post correction.

And it is more convenient, faster, and easier to set custom balance and it eventually enables us to save lots of time and energy for our digital workflow.

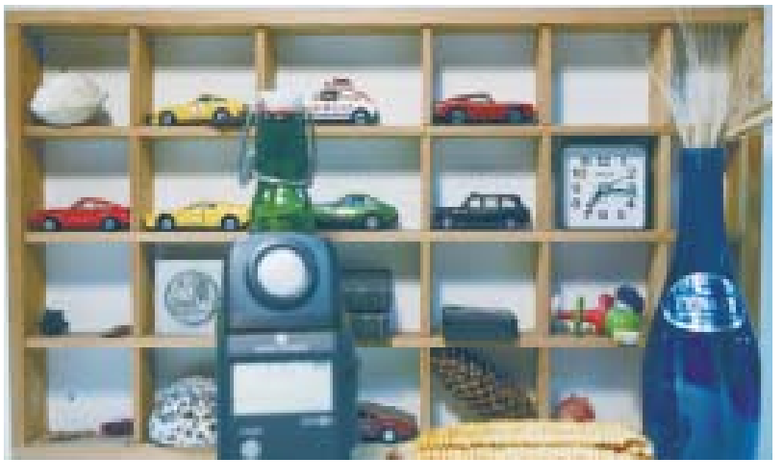
– Professor Hwang Seon Goo – Source: Photographic Art Magazine, April & June 2007

◈ Comparison of Gray Card, Color Meter and CBL Lens

Setting by Grey Card shows cool and not so natural. Setting by Color Meter shows all different results depending on the distance, angle or direction of light and the image looks like being taken under day light.

Setting by **CBL** Lens shows much more natural and original result under various mixed lighting such as tungsten, fluorescent, halogen, and daylight. The above image set by **CBL** Lens shows more natural and realistic colors as seen by our own eyes.

Setting by Color Meter



Setting by **CBL** Full Color Balance Lens

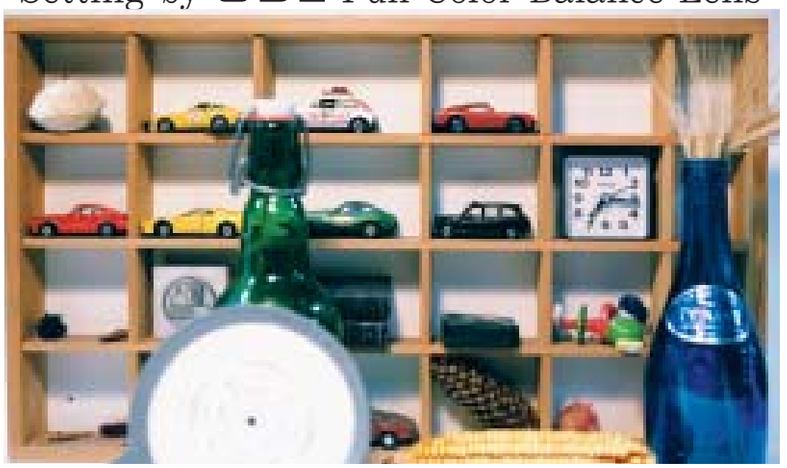


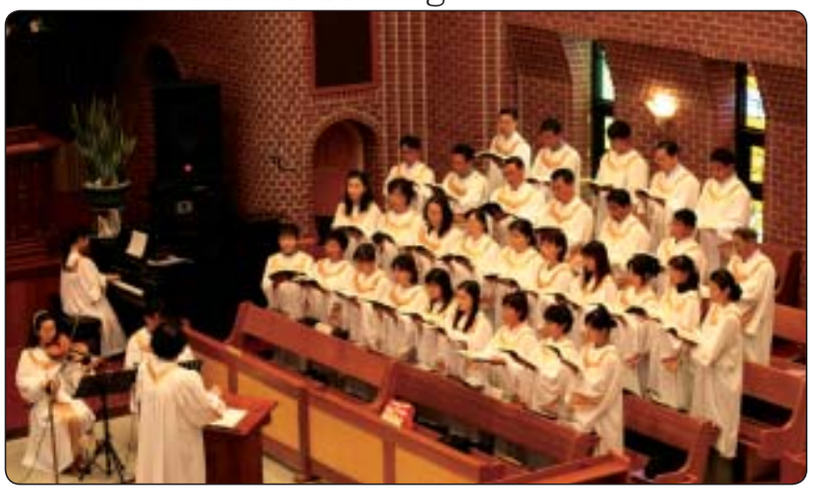
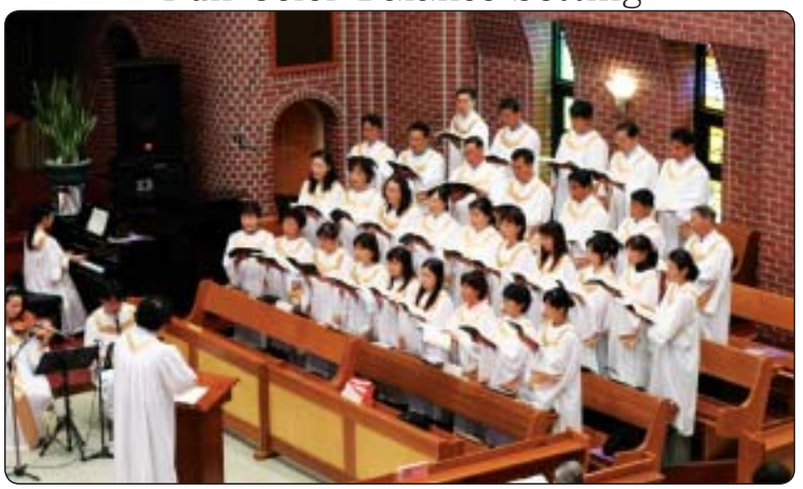
Photo Provided by Professor Hwang Seon Goo.
Source: Photographic Art Magazine, 2008

"**CBL** Lens shows more adaptability for uses and realistic color presentation than Color Meter under various lighting environment. We still do not know whether the major camera makers or software companies accept the new concept and standard of "Full Color Balance" but in near future the standard of White Balance will be changed to that of Full Color Balance."

– Professor Hwang Seon Goo – Source: Photographic Art Magazine, April & June 2007

◈ "Full Color Balance Setting" will help you find the original colors which you couldn't find before.

◈ CBL Lens setting under Mixed Light

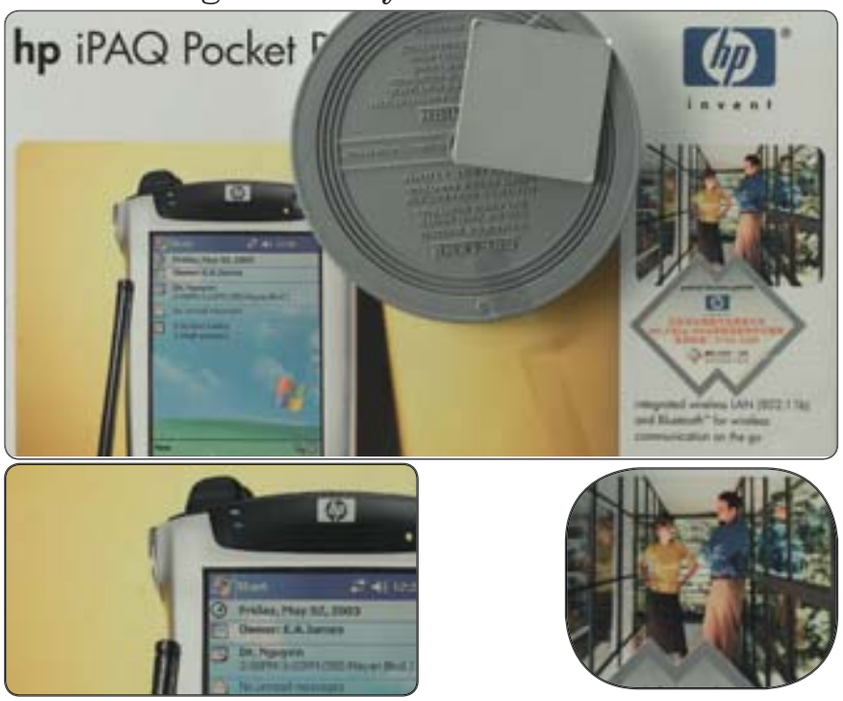
White Balance Setting

CBL Full Color Balance Setting

Under various mixed light, place your CBL Lens more to the main light to gather more lighting information.

CBL Lens shows much better results especially under various mixed lighting of daylight, tungsten, fluorescent, halogen, and others. CBL Lens expresses more natural colors as seen by eyes and it provides more adaptability for use and realistic color presentation.

– Professor Hwang Seon Goo –

Data Comparison with 22 Million Pixels Digital Back Camera

Data reading from Grey Card



Upper & below images are actually from one single shot taken by RAW and compared from the data of small square Grey Card and the back side of **CBL** Lens.

Image provided from Jin Studio
(Exclusive Studio for Samsung Group)

Data reading from **CBL** Lens

As seen at two images, even high end Digital Back mounted cameras by RAW need Full Color Balance setting by **CBL** Lens. DSLR cameras also need **CBL** Lens setting before shooting subject by RAW mode and you can get the better color image without further correction.
After setting by **CBL** Lens, if you still need some correction, it will be very easy and can be done within much shorter period of time.

Jin Studio is a very professional photographic studio exclusively for Samsung Group and their photographers are now pleased to use **CBL** 110mm.

◈ Image Comparison set by Grey Card and CBL Lens

White Balance Setting

CBL Full Color Balance Setting

White Balance Setting

CBL Full Color Balance Setting

Photo provided by Mr. Kim Sae Kwon, Professional Photographer, CBL Lens setting

◈ CBL Lens setting with 600 ~ 800mm telephoto lens

Photo by Mr. Park D.Y, Professional Photographer,
After CBL Setting with small lens, shoot with telephoto lens.

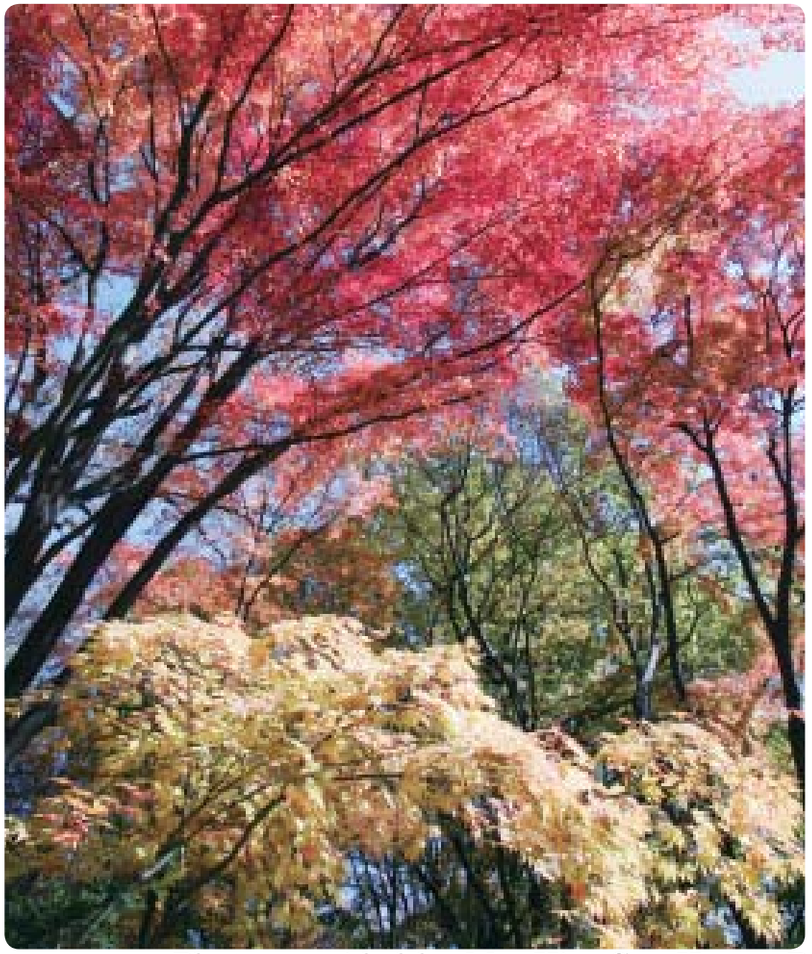
Setting by Grey Card

CBL Full Color Balance Setting

Photo by Mr. Kim Chul Min, Professional Photographer, Tilted Setting

◈ CBL Lens setting – Daylight

White Balance Setting



CBL Full Color Balance Setting

Photo provided by Mr. Kim Sae Kwon, Professional Photographer, CBL Lens setting

Standard Setting

Flood Light Setting

Try both ways of setting.

Adjust a bit the angle of your CBL Lens to gather more lighting source. Try Standard or Tilted Setting position. The right side image shows greater colors, resolution, gradation, sharpness of the leaves and stems.

◈ Please try CBL Lens setting more often under different directions and angles to get more accurate color image.It is a way of advanced and scientific photography.

◈ CBL Lens setting under Snowy Weather

White Balance Setting

CBL Full Color Balance Setting

Photo by Mr. Lee Do Hyung, Professional Photographer, CBL Setting

Standard Setting

Flood Light Setting

Try both ways of setting.

Adjust a bit the angle of your CBL Lens to gather more lighting source. Standard Setting. The right side image shows greater colors, resolution, gradation, sharpness of white snow and wood structure.

◈Once you are used to CBL Setting, you can get the best color image within few seconds.

◈ CBL Lens setting for Commercial Photography

White Balance Setting

CBL Full Color Balance Setting

Photo provided by Mr. Kim Sae Kwon, Professional Photographer, CBL Setting in front of show stage

Standard Setting

Flood Light Setting

Tungsten & halogen light emit from the ceiling with other mixed light and backlight. Face your CBL Lens more to the main light to gather more lighting information. The right Honda image expresses the exact color of silver metallic.

Please try CBL Lens setting under different directions and angles as the result may be slightly different depending on the camera models or lenses to get more accurate color image.

◈ CBL Lens setting under Low Illumination

White Balance Setting

CBL Full Color Balance Setting

Photo provided by Mr. Kim Sae Kwon, Professional Photographer, CBL Setting in front of show stage

Standard Setting

Flood Light Setting

Try both ways of setting.

Under low illumination, place your CBL Lens more to the main light to gather more lighting information with Standard Setting position.
The above two images were taken under the same shooting conditions and exposure but we can see the clear differences in resolution, gradation, sharpness, and the expression of deeper details.

"Custom White Balance by CBL Lens measure more accurate exposure level at P and Auto mode and even under very difficult lighting environment."

– Professor Hwang Seon Goo –

"Full Color Balance" is the very first &
important step among all of your digital workflows.

◈ CBL Lens setting under Low Illumination

White Balance Setting

CBL Full Color Balance Setting

Photo provided by Mdm. Han Sook Hyun, Professional Photographer, CBL Setting

Standard Setting

Flood Light Setting

Try both ways of setting.

Under quite low illumination, place CBL Lens by Standard Setting to gather more lighting source at this car park.
If you are used to CBL setting, it will be easily done in seconds.

– LFI Magazine, January 2008 –

"CBL Lens works particularly well with digital SLR cameras. CBL Lens will then supply the excellent results you are looking for. Even cameras with well-reputed white balance modes will clearly profit from the CBL Lens. The CBL Lens does not depend on the 18 percent grey balance and thus allows for full color white balance, also taking into account oblique stray light"

Summary of CBL Lens Testing Result

White Balance Setting

CBL Full Color Balance Setting

Testing by Prof. Hwang Soen Goo from Photographic Art magazine

I found that CBL Lens expresses natural and accurate color image as exactly seen by our own eyes after long period of my testing.
CBL Lens expresses excellent color image under various lighting environments. It is beyond the limitation of White Balance which is not consistent every time and it is totally different from Grey Card which was originally designed for measuring exposure level rather than capturing and reading the various lighting source.
CBL Lens is the most innovative and advanced devices so far to provide Full Color Spectrum information which solved the drawback of White Balance.

– Professor Hwang Seon Goo –

Source:Photographic Art Magazine, April & June 2007

"Full Color Balance Setting" by CBL Lens will increase the performance of your camera.

◈ Summary of CBL Lens Testing Result

White Balance Setting

CBL Full Color Balance Setting

Testing by Prof. Hwang Soen Goo from Photographic Art magazine

CBL Lens shows much better results especially under unexpected lighting environment as well as under various mixed lighting of daylight, tungsten, fluorescent, halogen, and others.

◈ Comparison of Grey Card, Color Meter, and CBL Lens

Grey Card shows cooler image and not realistic feeling. Grey Card shows cooler expression and unnatural. Color Meter is so sensitive that it shows inconsistent results depending on shooting locations and angles and it looks like being taken under daylight which shows different feeling. But CBL Lens expresses more natural colors as seen by eyes than other devices. CBL Lens provides more adaptability for use and it shows realistic color presentation.

– Professor Hwang Seon Goo –

Source: Photographic Art Magazine, April & June 2007

Summary of CBL Len Testing Result

White Balance Setting

CBL Full Color Balance Setting

Testing by Prof. Hwang Soen Goo from Photographic Art magazine

Comparison of Grey Card, Color Meter, and CBL Lens

"Grey Card shows cooler image and not realistic feeling. Grey Card shows cooler expression and unnatural. Color Meter is so sensitive that it shows inconsistent results depending on shooting locations and angles and it looks like being taken under daylight which is different feeling. But CBL Lens expresses more natural colors as seen by eyes than other devices. CBL Lens provides more adaptability for use and it shows realistic color presentation."

– Professor Hwang Seon Goo –

Source: Photographic Art Magazine, April & June 2007

◈ Summary of CBL Len Testing Result

White Balance Setting

CBL Full Color Balance Setting

Testing by Prof. Hwang Soen Goo from Photographic Art magazine

Under cloudy weather digital camera shows different colors from seen by eyes and after setting the camera mode of cloud, it shows as being taken under daylight. CBL Lens express the realistic cloudy weather image as seen by eyes.

(See the differences in the red color of car, wall brick, yellow road line, road)

Photographers normally use Grey Card, Color Meter, Exposure Meter or other devices to express more accurate colors, gradation, contrast or to get precise exposure level.
But among all other devices, CBL Lens is the most innovative and advanced devices so far to help express greater colors, gradation, and deeper details.

– Professor Hwang Seon Goo –

Source: Photographic Art Magazine, April & June 2007

Summary of CBL Lens Testing Result

White Balance Setting

CBL Full Color Balance Setting

Testing by Prof. Hwang Soen Goo from Photographic Art magazine

"I found that CBL Lens express natural and precise color image as exactly seen by our own eyes after long period of my testing.
If we take photos under quite difficult environments like rainy day, AWB express cool and unclear colors, and White and Grey card express as being taken under bright day light. These are all far from the real actual rainy scene and images.
But CBL Lens express more accurate colors and image which most photographers want to obtain under those difficult lighting environments."

– Professor Hwang Seon Goo –

Source: Photographic Art Magazine, March & May 2007

"Full Color Balance" is the very first &
important step among all of your digital workflows.

◈ Summary of CBL Lens Testing Result

White Balance Setting

CBL Full Color Balance Setting

Testing by Prof. Hwang Soen Goo from Photographic Art magazine

"CBL Lens express more abundant gradation, deeper details, and the image looks to be more focused because of the vast Full Color Spectrum information.
Under rainy day, you can see the differences between left image taken by AWB and right image set by CBL Lens.(The color of this gate is gold seen as right image)
The precise and natural colors, better gradation and sharpness are all the advantages which other devices such as White and Grey Cards Balance could not express."

– Professor Hwang Seon Goo –

Source: Photographic Art Magazine, March & May 2007

◈ Comparison between Slide Film Photo and Digital Photo set by CBL Lens

Positive Film Photo

CBL Full Color Balance Setting

Photo provided by Mr. Lee G K, Professional Photographer, CBL setting

Standard Setting

Flood Light Setting

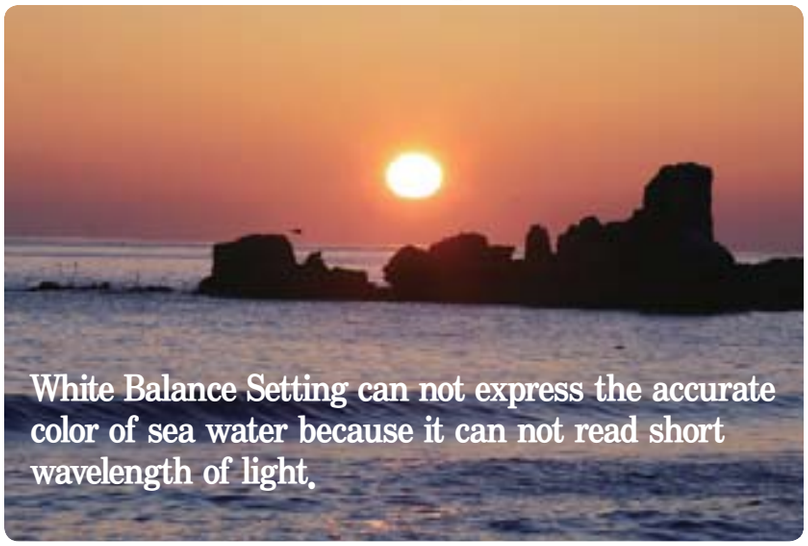
As CBL Lens setting enables to gather vast ranges of spectrum even from far distance, the right side image set by CBL Lens express much greater resolution, gradation, sharpness, deeper details of original image than the left slide film photo.

"CBL Lens eventually increases the performance of our digital cameras and workflow as it expresses much greater resolution, gradation, sharpness, deeper details of original image by vast ranges of Full Color Spectrum information."
– Professor Yang Jae Mun, from the book of "Digital Photo School"

"Full Color Balance" is the very first &
important step among all of your digital workflows.

◈ CBL Lens setting under Sunrise or Sunset

White Balance Setting



CBL Full Color Balance Setting

CBL Full Color Balance Setting can expresses the accurate original color image of sea water because it can read vast ranges of wavelength of light..

Standard Setting

Flood Light Setting

Try both ways of setting.

CBL Full Color Balance Setting can read vast ranges of wavelength of light and it expresses the accurate original color image of sea water.

Tip: The ranges of wavelength of light by White Balance Setting are between 5,000K – 5,600K but CBL Full Color Balance Setting can read much wider ranges of wavelength of light between 1,000K – 20,000K and it expresses the accurate original color image even under very difficult lighting environment.

Please try CBL Lens setting more often under different directions and angles as the result may be slightly different depending on the camera models or lenses to get more accurate color image.

Summary of CBL Lens Testing Result

White Balance Setting

CBL Full Color Balance Setting

Photos provided by professor Yang from Samsung GX-10 Guide Book

"CBL Lens expresses even under shadow much greater resolution, gradation, sharpness, deeper details of original image by vast ranges of Full Color Spectrum information." - Professor Yang Jae Mun, from the book of "Digital Photo School"

White Balance Setting

CBL Full Color Balance Setting

Photo provided by Mr. Kim Sae Kwon, Professional Photographer, Standard Setting

◈ CBL Lens setting under Flood Light

White Balance Setting

CBL Full Color Balance Setting

Flood Light Setting

The green tree receives the stronger day light through the glass and receives the indoor mixed lights including tungsten.
Place your CBL Lens near to the main light(near to the green tree) to receive 70 ~ 80% of daylight and to receive 20 – 30% of indoor light. The two zoom in images are comparison set by White Balance and CBL Lens Setting which shows greater differences of colors of leaves and glass.

Please try CBL Setting more often under different directions and angles to get more accurate color image.

CBL Lens setting for Close Up shooting

White Balance Data

CBL Full Color Balance Data

"Full Color Balance Setting"
is the innovative and scientific way of your photography.

Gray 18% Balance Data

CBL Full Color Balance Data

Try CBL Lens setting under different directions and
angles based on the above two positions to get more accurate color image.

◈ CBL Lens setting under Low Illumination – Far Night View

White Balance Setting

CBL Full Color Balance Setting

Photo by Mr. Son Su Kil, Professional Photographer, CBL Setting

The vast ranges of Full Color Spectrum information by CBL Setting can read and memorize deeper details even in the dim or dark environment.

Standard Setting

Flood Light Setting

Try Both ways of Setting.

Adjust a bit the angle of your CBL Lens to face to the main light to gather more lighting source by Standard or Tilted Setting.

Tip: If you are shooting under very low illumination or dark place, your camera may not read CBL Setting properly. In this case, do CBL Setting near to your shooting subject to gather more lighting source and then go back to your shooting location to shoot the subject.

Only ONE CBL 110mm is enough for all of your cameras

"Full Color Balance Setting" is now the name of the game in modern photography .

◈The Color of CBL Lens at camera LCD when CBL setting was done properly.

1. For Canon camera models, you should select "Custom WB" at the MENU and select Custom WB to do CBL Lens setting. (You can not do CBL Lens setting at "AWB" of the MENU.)

2. For Nikon camera models, you should select "WB PRE" at the MENU WB PRE to do CBL Lens setting.

3. Basically for all camera models, you should select "Custom WB" or "PRE", "Preset" at the MENU to do the CBL Lens setting.

4. Times of setting: Basically whenever lighting environment changes, you should set again. Under same or similar environment, No need to set CBL Lens again. For example in outdoor daylight, you should set CBL Lens at sunrise, sunset, 9-10am, noon-2pm, 5-6 pm whenever lighting condition changes.

(A few seconds of CBL Lens setting lets you have beautiful color-corrected Images without further corrections.)

◈ The Color of CBL Lens at camera LCD when CBL setting was done properly.

The above images may be slightly different depending LCD of different camera models

◈ The Color of CBL Lens at camera LCD when CBL setting was NOT done properly.

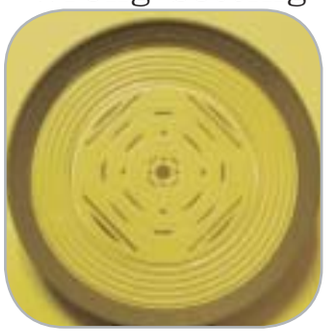
For Canon models, if CBL Lens setting was NOT done properly, or if error at "Custom" function, the color of CBL Lens appears differently as below.

Note: At Picture Mode, CBL Lens setting can NOT be done properly because it can not express "PRECISE" colors.
Please set standard mode at your camera body as 0000 ~ Neutral 0000 for more accurate CBL Setting. At standard mode 0000, do not set CBL Lens setting at AWB.

Wrong setting

Wrong setting

Wrong setting



Wrong reflection

If the above error images appear on LCD, please check the "Custom WB" mode again or tilt CBL Lens a bit away from too strong reflection. After setting properly, you may repeat setting one more time for more complete setting.

Please try CBL Lens setting more often with different directions & angles under different lighting environment until you get used to it Once you are used to it, CBL Lens setting can be done in few seconds

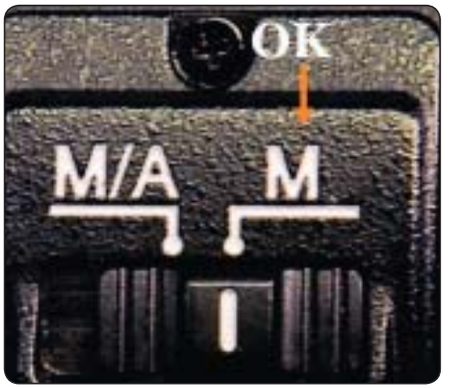
CBL Lens is the most innovative Full Color Balance device so far which enables to express the color images with greater gradation and deeper details.

– Professor Hwang Seon Goo – Source: Photographic Art Magazine, April & June 2007

◈ Basic CBL Lens setting for Portrait & Scenery

As the image below, the Standard Setting can be used under most of lighting environment because this position can collect more lighting information everywhere. Fill more than 80% of CBL Lens at the view finder or LCD when setting CBL Lens.

If you can not set CBL Lens at AF mode, turn into M mode of your camera lens and set CBL Lens. And when shooting, turn into AF mode.



White Balance Setting

Full Color Balance Setting

Standard Setting

Tilted Setting

Try both setting positions

As we used many different kinds of filters to get better color image during our film photography, now the essence of digital photography becomes "Full Color Balance."
Invest a few seconds whenever lighting changes and you can get the excellent color images which you could not experience before.

◈ Basic CBL Lens setting for Portrait & Scenery

White Balance Setting

Full Color Balance Setting by CBL Lens

CBL Lens setting provides Full Color Spectrum information with vast ranges of deeper details for more accurate and realistic color expression.

For portrait, use Standard Setting position at your shooting place and avoid any shadow appeared on CBL Lens when setting.

Try to gather more of your surrounding light on to the CBL Lens.

Please try to set more times & directions under different lighting environment until you get used to it. Once you are used to it, CBL Lens setting can be done in few seconds.

◈ Basic CBL Lens setting with Telephoto Lens

Photo provided by Mr. Park Yong Dae, Professional Photographer,
600mm telephoto lens, Setting by CBL Lens

The images show the clear details of the flying bird and the deeper colors of soil on beak and head of the bird. CBL Full Color Balance enables you to get the vivid original color image without further correction.

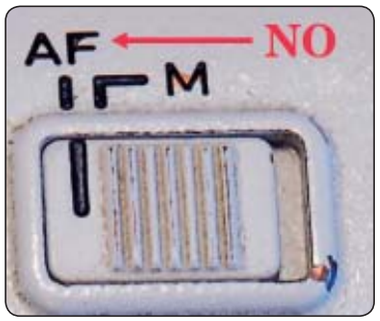
"My tests of CBL Lens units resulted in a very accurate white balance, with no colorcast for the final image".

– Professor Harris Fogel –

Department of Photography, The University of Art, Philadelphia

◈ CBL, "The Name of Full Color Balance"

After setting proper exposure level, switch to M mode of your telephoto lens



1. As the image above, set CBL Lens to gather more surrounding light. Avoid any shadow of your body or camera on **CBL** Lens when setting.
(The distance between **CBL** and telephoto lens will be 15cm – 25cm.) In case **CBL** Lens setting can not be done at M mode, do CBL Lens setting by AV or TV mode. After **CBL** Lens setting, you can switch to M mode when shooting.

2. You can use a short distance normal lens for **CBL** Lens setting and then you can replace it with telephoto lens for shooting.
Basically if lighting environment changes, you should set again. Under same or similar environment, no need to set **CBL** Lens again.

For example under outdoor daylight, you should set **CBL** Lens each time at sunrise, sunset, 9 – 10am, noon – 2pm, 5 – 6 pm whenever lighting condition changes.

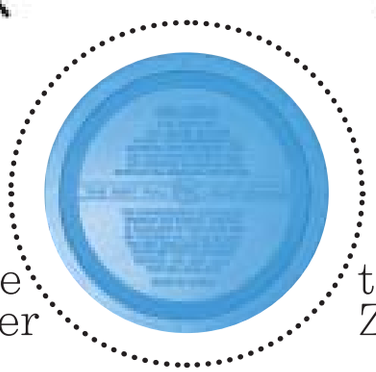
"Invest a few seconds and you can get excellent color image".

"**CBL** Lens makes it possible to express precise original color image by sending Full Color information into your camera."

From the book,"Digital School" by Professor Yang Jae Moon.

Basic CBL Lens setting with Digital Back & DSLR Cameras

When you do CBL Lens setting with Digital Back mounted View Camera under strobe lighting, use back(refraction) side of CBL Lens placing in front of the shooting subject. And then do CBL Lens setting at the same time flashing strobe lights. You can check more various color data from this back side of CBL Lens.



Fill more than 80% of view finder

Zoom in like this

Fill more than 80% of CBL Lens of your view finder or LCD and Zoon in the image of CBL Lens and do setting at the same time when flashing strobe lights.

For DSLR cameras, use Standard Setting method to gather more lighting source. Avoid any shadow on the surface of CBL Lens when setting.
CBL Lens setting provides vast ranges of color wavelength for the best image you could expect.

◈ CBL Lens setting with Built In or Mounted Flash Light

Make enough space between CBL Lens and your camera when setting CBL Lens with built in or mounted flash light to gather enough flash light information. If flash bounces to ceiling, use the front side of CBL Lens.

If flash bounces directly to CBL Lens, use the back side of CBL Lens.

Tip: If flash bounces to ceiling, you can use either front or back side of CBL Lens. Try to use either front or back side of CBL Lens to get more accurate setting result depending on the capacity or performance of flash lights, camera models, and lenses.

"CBL Lens is a new Full Color Balance device to get natural original color image under various lighting environment beyond the limitation of the current White and Grey Cards."

– Professor Hwang Seon Goo –

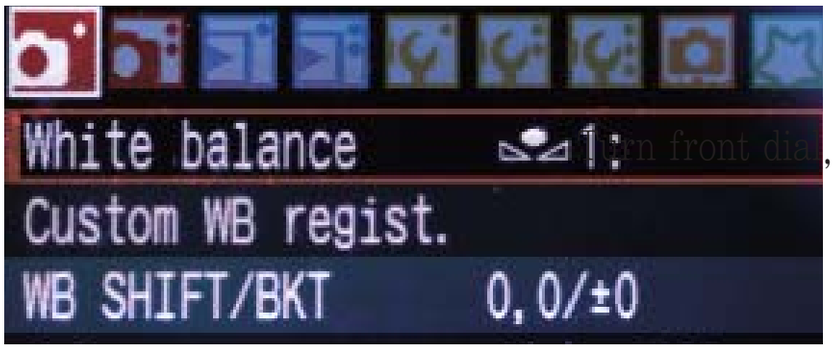
Source: Photographic Art Magazine, April & June 2007

Canon EOS 1Ds MARK Ⅲ / 1D MARK Ⅲ CBL Lens setting

At AWB or Picture Mode Default 3,0,0,0 – Scenery, Portrait, CBL Setting can NOT be done. Set standard mode at your camera body as 0.0.0.0 ~ Neutral 0.0.0.0

for more accurate CBL Setting.

If you set your MENU at "Custom WB", it will be easy & convenient for your next CBL setting.



1. While pressing MENU button, turn front dial, select "Custom WB" and release MENU button.

2. While pressing MENU button, turn front dial, select "Custom WB" and release MENU button.

3. While pressing "MENU" button again, turn the dial,

3. Press "FOLDER" and [1] flickers

4. While [1] flickering, do CBL setting (Take photo of CBL Lens).

5.After that, press "SET" button.

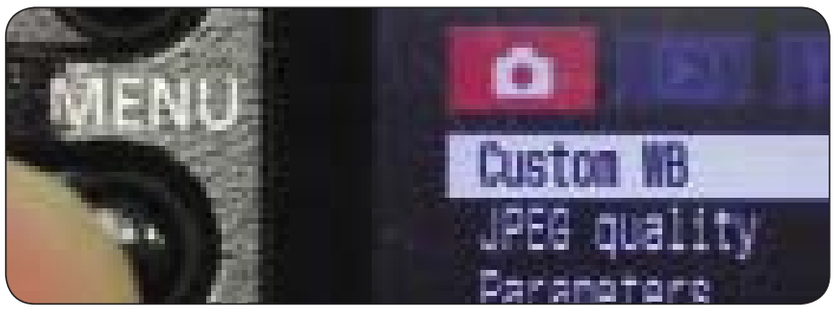
6. With this image, your CBL setting is completed. Take your photos.

Canon EOS 1D MARK II CBL Lens setting

At AWB or Picture Mode Default 3,0,0,0 – Scenery, Portrait, CBL Setting can NOT be done. Set standard mode at your camera body as 0.0.0.0 ~ Neutral 0.0.0.0

for more accurate CBL Setting.

Set standard mode at your camera body as
0.0.0.0 ~ Neutral 0.0.0.0 for more accurate CBL



1. While pressing MENU button, turn front dial, select "Custom WB" and release MENU button.

2. While pressing "WB" button, turn front dial, select and release "WB" button.

3. Do CBL setting(Take photo of CBL Lens).

Adjust a bit the angle of your CBL Lens to gather more lighting source surrounding you.

4. While pressing "SELECT" button, select the image of CBL Lens by turning menu dial. Release your finger from "SELECT" button and press it again and then select "OK" . Your CBL Setting is completed.

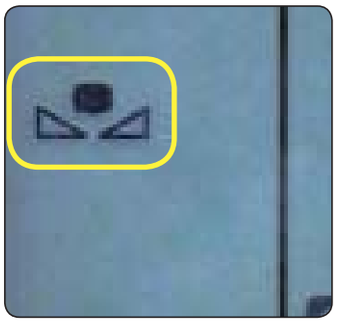
Canon 5D,20D,30D,40D CBL Lens setting

At AWB or Picture Mode Default 3,0,0,0 – Scenery, Portrait, CBL Setting can NOT be done. Set standard mode at your camera body as 0.0.0.0 ~ Neutral 0.0.0.0

for more accurate CBL Setting.

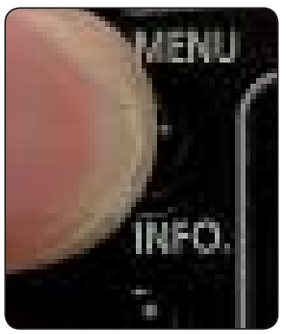
1. While pressing "AF · AW button,

Turn front dial,

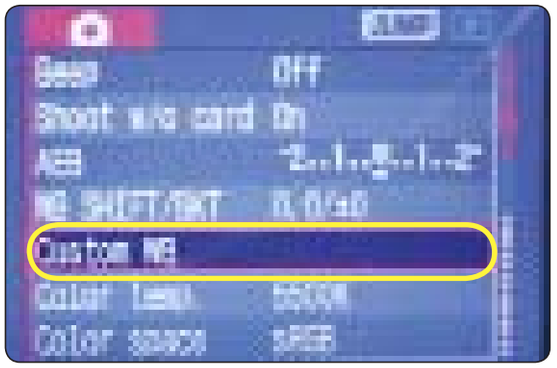


2. Select

3. Do CBL setting (Take photo of CBL Lens).



4. While pressing "MENU" button again, turn the dial,

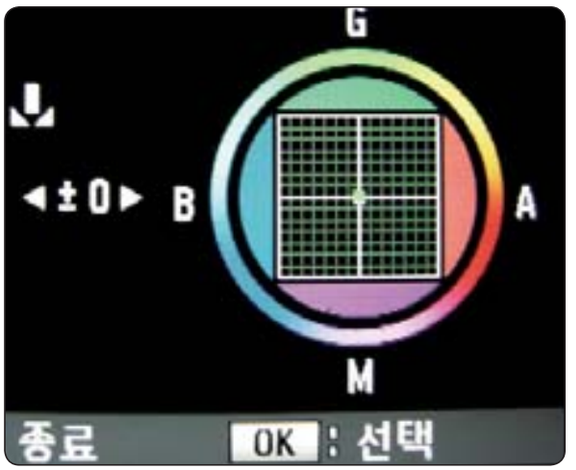


5. Select "Custom WB."

6. If this CBL image appears,

7. Press "SET" to complete your CBL setting.

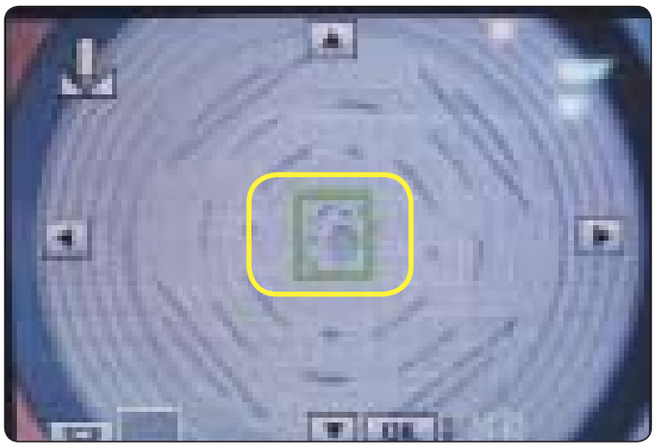
Samsung GX-10 ~ 20 & Pentax K - 10D CBL Lens Setting



1. While pressing "Fn" button, select

2.Press the low direction button.

3. Confirm Manual White Balance.



4. Do CBL setting(Take photo of CBL Lens). 5.Check the image of CBL Lens. 6. Press OK button

White Balance Setting

Full Color Balance Setting by CBL Lens

Fuji S3Pro CBL Lens setting

1. Press "FUNC" button.

"WB" button.

2. Select "CUS.1" or-2."

3. Press OK

4. Press the low direction button

5. Select "CUSTOM WB SET".

6. Press the right direction button.

7. With this image,

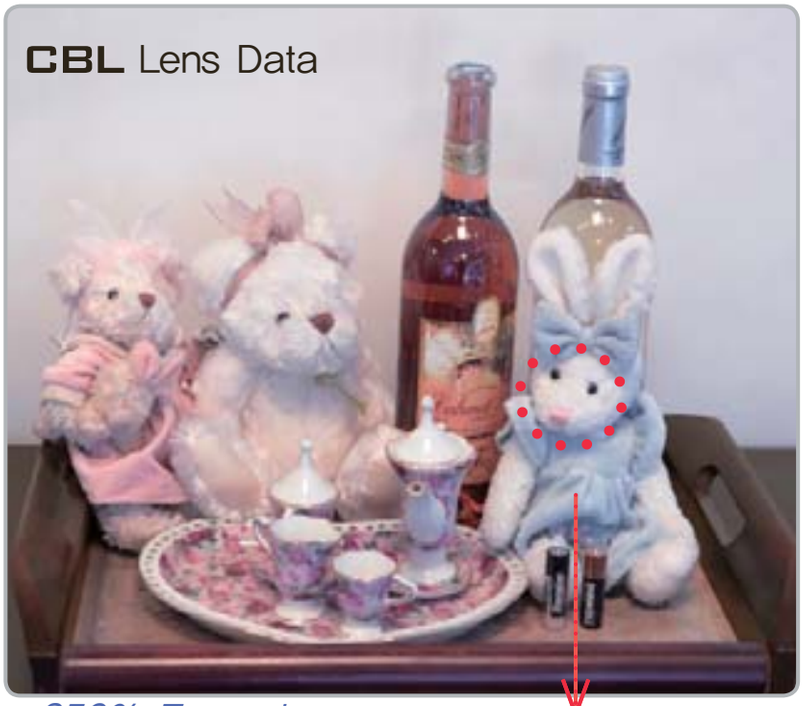
8. CBL Lens setting

9. If the CBL Lens appears like this, your setting has been done properly.

10. Press "OK" to complete your CBL setting.

Tip: If "OUT OF RANGE" appears, CBL setting was not properly done. Try again.

Image Comparison by 33Million Pixels Digital Back Camera "RAW"



250% Zoom In

250% Zoom In

"The images show the clear difference although these are taken by high end digital back camera by "RAW". You can see greater resolution, sharpness, gradation, and deeper details at the image set by CBL Lens Full Color Balance."

– from the book of "Digital School",
Prof. Yang J.M –

Gray Data

CBL Lens Data

Nikon D2 HS D3 CBL Lens setting

2 HS

D3

1. While pressing "WB" button, turn front dial, select "PRE" mode and release "WB" button.

▶ Same setting as Nikon D3

2. Press "WB" button for around 2 seconds.

2 HS

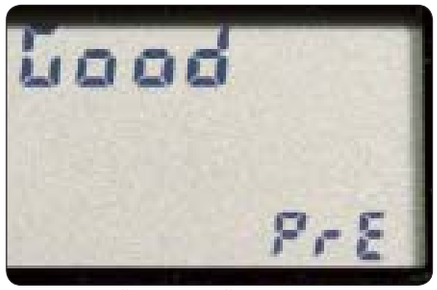
D3

3. While "PrE" is flickering, do CBL setting(Take photo of CBL Lens).

CBL Setting should be done while "PrE" flickering.

D3

2 HS

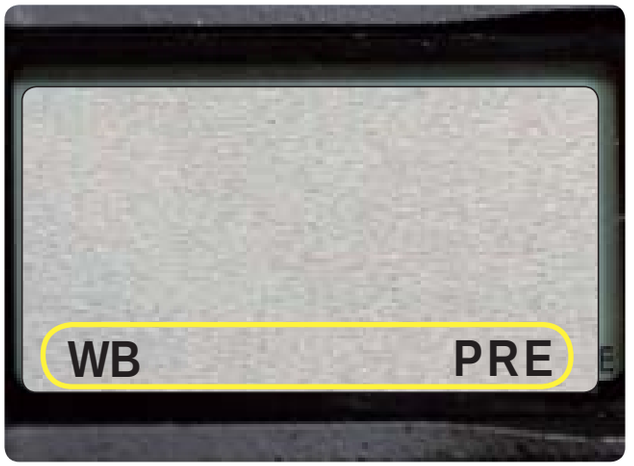


4. After setting, If "Good" is flickering, your CBL setting is completed.

TIP: If you are still not satisfied with the image taken after CBL setting, although "Good" appears, please try your CBL setting again.

If you fix the menu of "WB PRE", it will be easy & convenient for your every CBL setting.

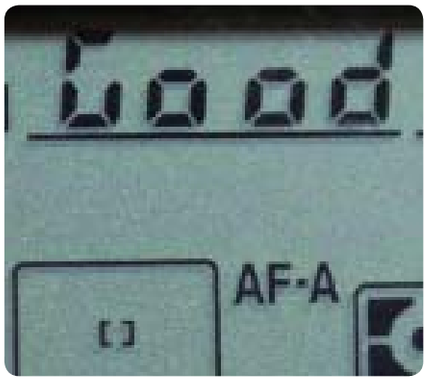
1. While pressing "WB" button, turn front dial,



Select "WB PRE" mode, and release your finger from the "WB" button.

2. Press "WB" button again for around 2 seconds.

3. While "PrE" is flickering, do CBL setting.

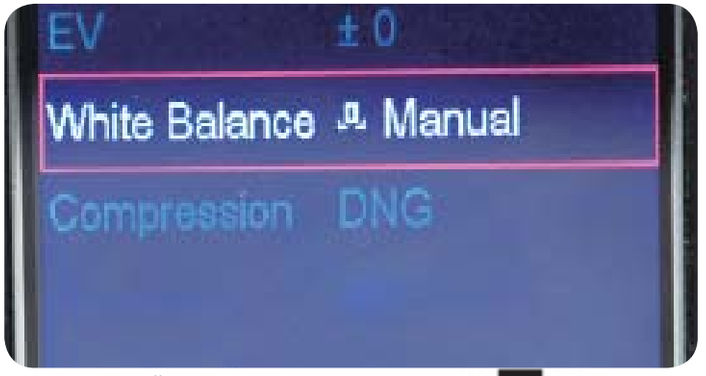


4. After CBL setting, If "Good" is appearing, your CBL setting is completed.

TIP: If you are still not satisfied with the image taken after CBL setting, although "Good" appears, please try your CBL setting again.

1. Press "SET" button.

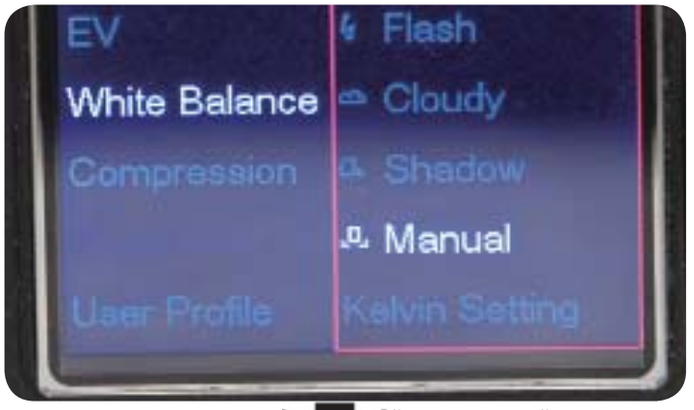
Pressing direction button,



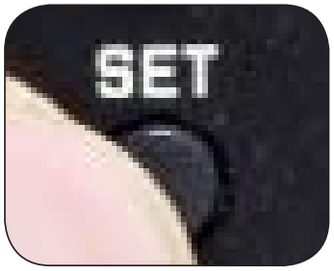
Select "White Balance Manual."

2. Press "SET" button again.

Pressing direction button,



Select "Manual" as above.



3. Press "SET" button again.

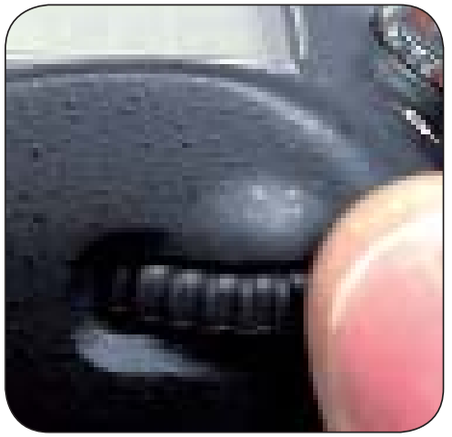
With this image, do CBL setting(Take photo of CBL Lens)

4. Your CBL setting is completed.

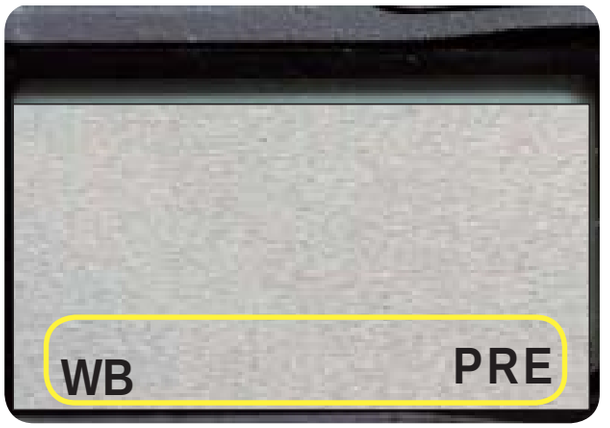
Tip: At the above image 4, the rectangle sometimes is out of CBL Lens but it is ok.

If you fix the menu of "WB PRE", it will be easy & convenient for your next CBL setting.

1. While pressing "WB" button,

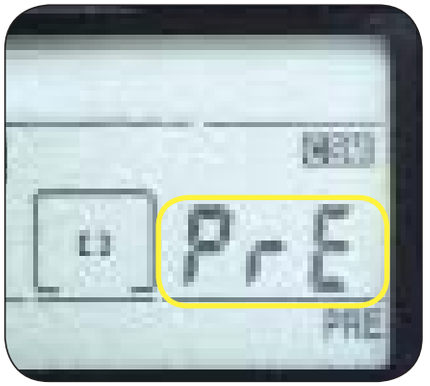


Turn front dial,

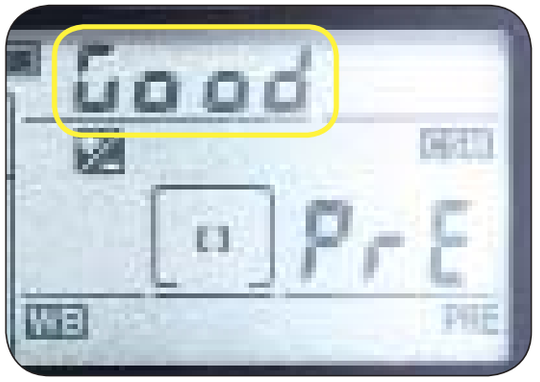


Select "WB PRE" mode, and release your finger from the "WB" button.

2. Press "WB" button again for around 2 seconds.



While "PrE" is flickering, do CBL setting.



If "Good" is appearing, your CBL setting is completed.

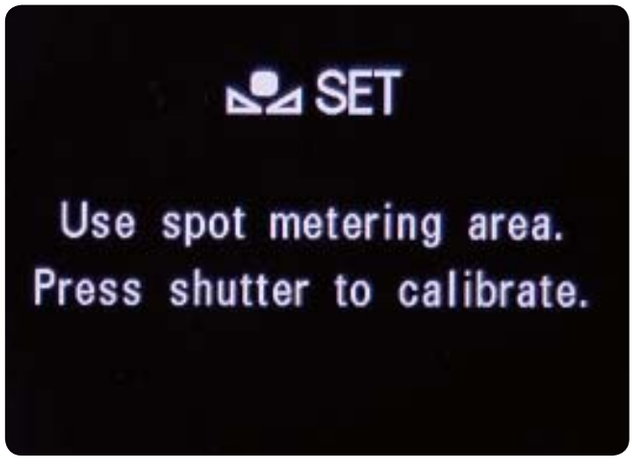
TIP: If you are still not satisfied with the image taken after CBL setting, although "Good" appears, please try your CBL setting again.

SONY a 700 or similar CBL Lens setting

1. Press "WB" button.

2. ◀▶▲▼ Using direction key,

3. ◀ ▶ Using direction key, select ↑

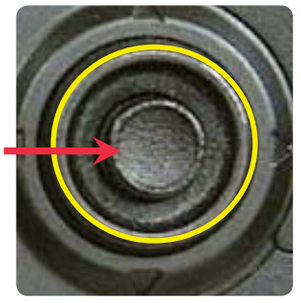


4. Select this image.

5. Do CBL setting (Take photo of CBL Lens).

6. If above image appears,

7. Press center button to complete CBL setting.



OLYMPUS E-3, 510, 410 / 1.CBL Lens setting

1.Press "MENU" button. With direction key

1 Press "OK"▶

2 Press "OK"▶

3 Press "OK"▶

After 1 2 3 press "OK" and then basic setting completed.

2.CBL Lens setting with Fn function

1. Fill 70 – 80% of CBL Lens at camera view finder

◈ One touch Fn function makes it easy CBL Lens setting

2. Press Fn & "Shutter" button, Data set by CBL is stored →

3. Select and store among 1~4

Select "YES" and press "OK" to complete CBL Lens setting.

High Definition(HD) Cameras CBL Lens 220mm setting

All HD Cameras have Full Color Balance(White Balance) function.
Many professional photographers used "Grey Card", "White Paper", or "Color Chart" to set White Balance but they could not get the accurate color images and spent lots of time for further correction. The reasons they could not get the accurate colors or they spent hours for correction are from the existing "White Balance Setting" although HD cameras are developed to set "Full Color Balance."

Unfortunately many professional photographers are still depending on the very old concept of "White Balance" of Zone System Grey Scale which was used to explain the exposure level of black and white photography.

A new CBL Lens 220mm are designed especially for Broadcasting or Movie HD Video Cameras to set Full Color Balance for accurate and original color presentation.

The key components of CBLV Lens are *Condense Lens to gather all surrounding light, *Polygon Prism Mixed Boards to set Full Color Balance, and *Reflection Boards to emit the Full Color Spectrum Information into your HD Cameras. This is the first world patented technology.

The Full Color Balance setting by CBL Lens enables to get greater resolution, gradation, sharpness, and expression of deeper details which you do not need further correction.

"White Balance Setting" mostly can not express accurate original colors because it can not read Full Color Spectrum Information.

"Full Color Balance Setting" by CBL Lens can express accurate original colors because it can read Full Color Spectrum Information.

SONY HDW-F900 CBL Lens 220mm setting

Basically it is same way to set White Balance with Grey Card or Color Chart.

1. Select WB switch to "A" or "B"

2. ON "WHT-- BLK" switch

3. It shows like above

4. It shows like above and CBL Lens setting completed.

Kelvin Meter: This Meter built in HD Camera shows inconsistent results depending on directions or angles of the spot and those are the limitations of spotting Kelvin Meter or White Balance.

However, Setting by CBL Lens shows greater resolution, gradation, sharpness, and the accurate expression of deeper details by Full Color Spectrum Information which you do not need further correction.

The Kelvin by Full Color Balance of CBL Lens is different from that of White Balance. This is our unique technology.

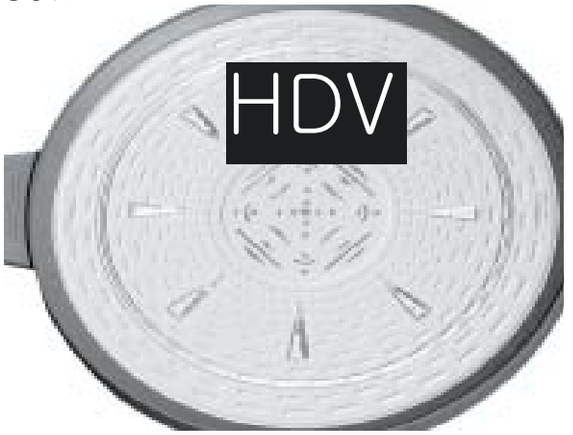
CANON XL-H1 CBL Lens 220mm setting

Basically it is same way to set White Balance with Grey Card or Color Chart.

1. Push the button and it pop up

Select "1" or "2" and do CBL Lens setting with zoom in 70 – 80%

After setting, push back the button



3. Press button for 2 – 3 seconds and LCD monitor shows like this. CBL Lens setting completed.

AWB Auto White Balance setting

CBL Full Color Balance setting

Panasonic AG-DVX100B JVC GY-HD 250U CBL 220mm setting

JVC GY-HD250U

Panasonic AG-DVX100B

1. Select WHITE BAL switch to "A" or "B"

2. Zoom in and fill 70-80% of view finder

3. Press AWB button for CBL Lens setting

4. It shows like above and CBL Lens setting completed

AWB Auto White Balance setting

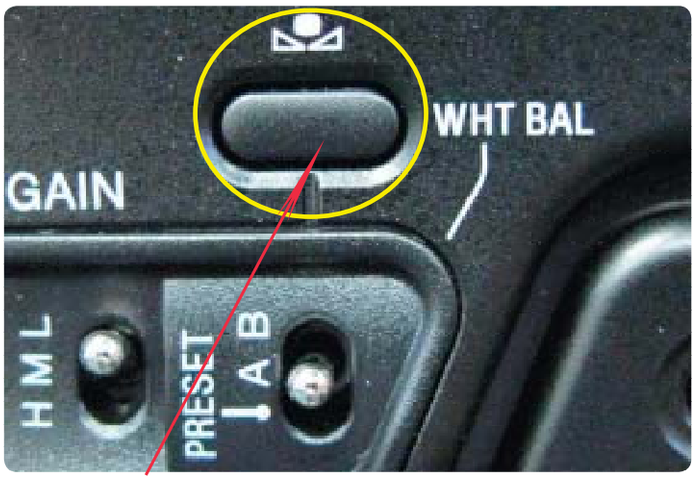
CBL Full Color Balance setting

SONY HVR-V1N CBL Lens 220mm setting

1. Select PRESET switch to "A" or "B"

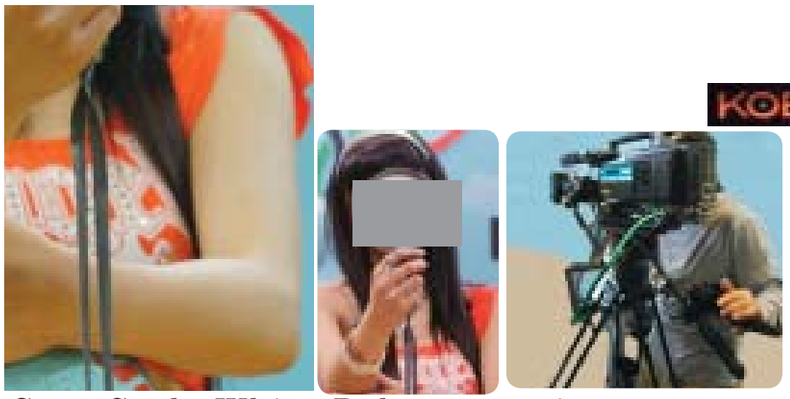
Basically it is same way to set White Balance with Grey Card or Color Chart.

2. Zoom in and fill 70 – 80% of view finder



3. Press button for CBL Lens setting

4. It shows like above and CBL Lens setting completed



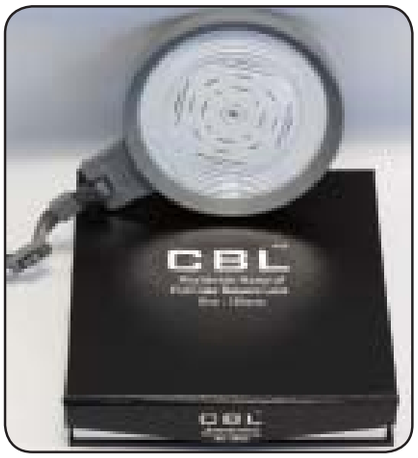
Grey Scale White Balance setting

CBL Full Color Balance setting

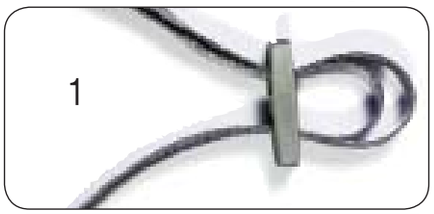
HD PROF-220mm

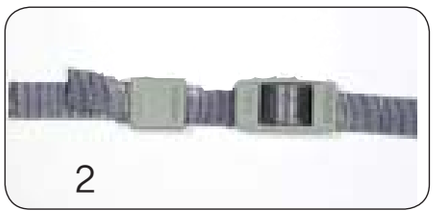
for HD Broadcasting & Movie Cameras

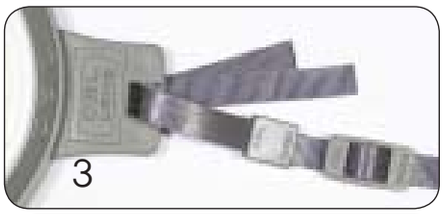
DSLR PROF110mm / 85mm

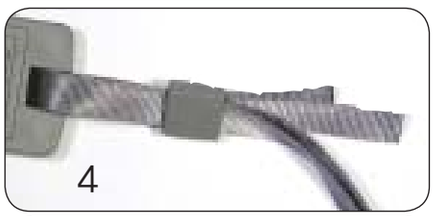


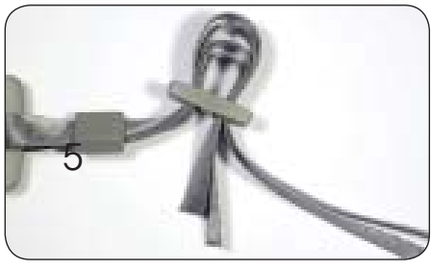
220mm / 110mm / 85mm

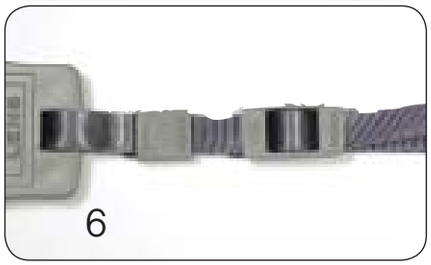












Note : For further inquiry on CBL Lens, please contact your dealer or our country distributor.

The specifications of CBL Lens can be changed without prior notice.

A Masterpiece of Full Color Balance

CBL

Top Photographers Enjoy Greater Resolution, Gradation, Sharpness, & Deeper Details With Full Color Balance By CBL Lens

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